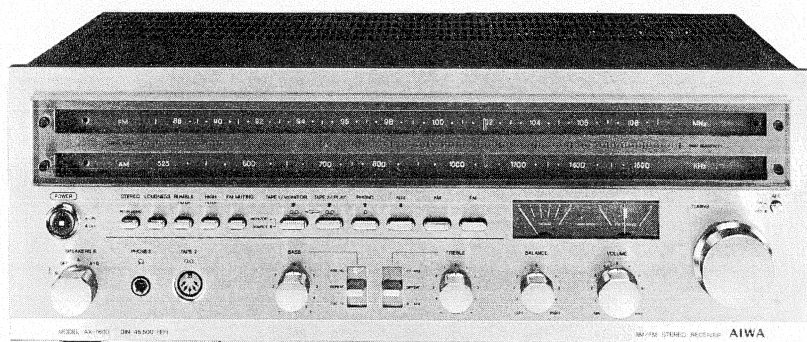


FM/AM STEREO RECEIVER

MODEL AX-7600^{EE, UK}

AIWA[®]

[SERVICE MANUAL]



Set using ISO screws

DATE OF ISSUE 30/11/1977

SPECIFICATIONS

GENERAL

Semiconductors: 1 IC, 3 FET, 68 transistors, 43 diodes & 7 LED
Power source: AC 120 V/220 V/240 V (switchable)
 50/60 Hz
Power consumption: 330 W (MAX)
Dimensions: 450(W) x 162(H) x 365(D) mm
Weight: 13 kg

FM TUNER SECTION

Frequency ranges: 87~109 MHz
Intermediate frequency: 10.7 MHz ± 0.1 MHz
Frequency scale accuracy:
 ± 150 kHz (88 MHz)
 ± 150 kHz (98 MHz)
 ± 150 kHz (108 MHz)
Noise limit sensitivity: AX-7600EE: (SN26 dB, div 40 kHz)
 5 ± 1.5 dB (88.98 MHz)
 6 ± 1.5 dB (108 MHz)
 AX-7600UK: (SN30 dB, div 75 kHz, THD 3%)
 $5.5 \leq 7$ dB (88.98 MHz)
 $6 \leq 8$ dB (108 MHz)

Image frequency interference ratio:
 $80 \geq 75$ dB (108 MHz, 300 Ω BAL)

Intermediate frequency interference ratio:
 95 dB (98 MHz, 300 Ω BAL)
 90 dB (98 MHz, 75 Ω UN BAL)

Muting sensitivity: 20 ± 5 dB (98 MHz)

Effective selectivity: AX-7600EE: (tune out 300 kHz, div 40 kHz)
 50 dB
 AX-7600UK: (tune out 400 kHz, div 75 kHz)
 60 dB

Capture ratio: 1.7 dB
Separation: $39 \geq 35$ dB (1 kHz)

SN ratio: 65 dB (98 MHz, input 60 dB)
 (Un-Weighted)

AM TUNER SECTION

Frequency ranges: 515~1650 kHz
Intermediate frequency:
 AX-7600EE: 455 kHz ± 5 kHz
 AX-7600UK: 468 kHz ± 5 kHz

Frequency scale accuracy:
 ± 15 kHz (600 kHz)
 ± 20 kHz (1000 kHz)
 ± 20 kHz (1400 kHz)

Noise limit sensitivity: 48 ± 3 dB (600, 1000, 1400 kHz)
 (SN20 dB)

Image frequency interference ratio:

$40 \geq 35$ dB (1400 kHz)

Intermediate frequency interference ratio:

30 ± 5 (input 74 dB, 1000 kHz)

+22/-30 ± 8 dB (1000 kHz)

IF selectivity: $44 \geq 36$ dB (input 74 dB, 1000 kHz)

Tuning hum: 45 dB (1000 kHz)

AGC characteristic: 45 dB (1000 kHz)

PRE AMP SECTION

<PHONO AMP SECTION>

Sensitivity/impedance: 1.6 ± 0.2 mV/43 ≥ 40 k Ω

Gain: 16.4 ± 1.5 dB (1 kHz)

Allowable input: 200 ± 50 mV

Distortion: $0.025 \pm 0.01\%$ (input 100 mV ≥ 1 kHz)

RIAA curve deviation: $\pm 0 \pm 0.5$ dB (30 Hz~15 kHz)

Separation: 50 dB (1 kHz)

SN ratio: (Un-Weighted) $68.5 \geq 60$ dB

<TAPE-1, AUX SECTION>

Sensitivity/impedance: 88 ± 3 mV/600 ≥ 550 k Ω

Gain: 0 ± 3 dB (1 kHz)

Distortion: $0.05 \leq 0.1\%$

Frequency: $+0$ dB (20 Hz~50 kHz)

Separation: 50 dB

SN ratio: (Un-Weighted) $74 \geq 68$ dB

CONTROL, MAIN AMP SECTION

Tone controls: BASS
 $+8, -7$ dB/+6, -5 dB ± 1.5 dB (100 Hz)
 400/200 Hz turnover frequency
 TREBLE
 $+8, -9$ dB/+5, -6 dB ± 1.5 dB (10 kHz)
 2.5/5 kHz turnover frequency
Loudness Response: $+7.5 \pm 1.5$ dB (100 Hz)
 (With volume at -40 dB)
 $+4.9 \pm 1.5$ dB (10 kHz)
High filter: -3.4 ± 1.0 dB (8 kHz)
Rumble filter: -14 ± 2 dB (5 kHz, SP OUT)
 -15.2 ± 2 dB (5 kHz, TAPE OUT)

Continuous power output:

45W ± 45 W (4 Ω)

40W ± 40 W (8 Ω)

1 kHz (both channels driven)

Harmonic Distortion: 0.2% (45W+45W, 8 Ω)

Power bandwidth: 10 Hz~50 kHz

(distortion 0.2%)

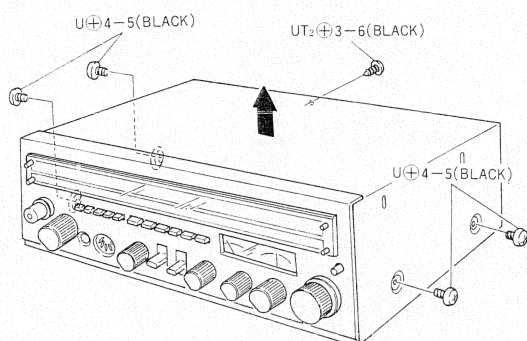
Residual noise: 0.5 mV (8 Ω)

- Specifications and external appearance are subject to change without notice due to product improvement.

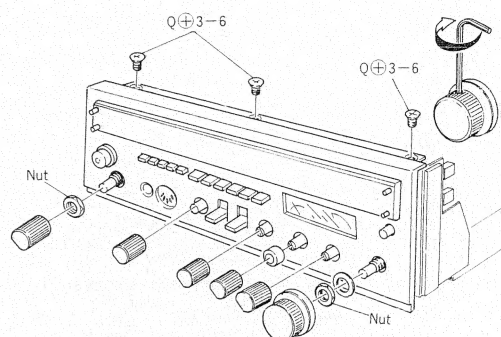
DISASSEMBLY INSTRUCTIONS

To Remove Cabinet

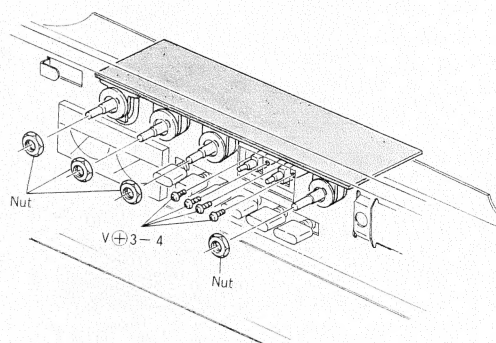
- 1) Remove 5 screws.

**To Remove Front Panel**

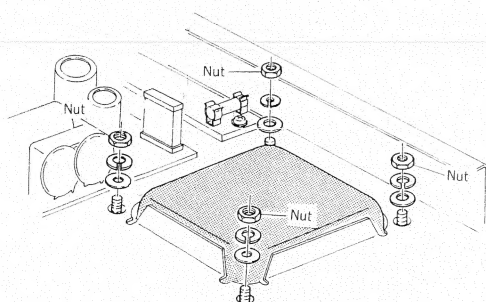
- 1) Pull out the control knobs.
- 2) Remove 2 nuts and 3 screws.

**To Remove Tone Circuit Board**

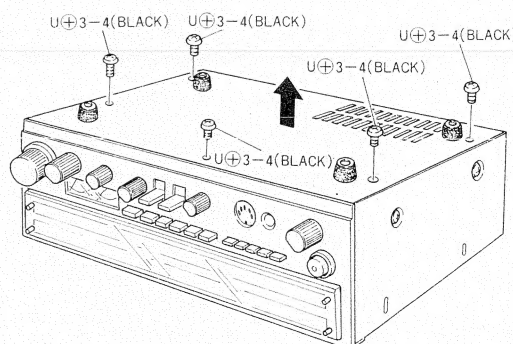
- 1) Pull out the collar and lever knobs.
- 2) Remove 4 nuts and 4 screws.

**To Remove Power Transformer**

- 1) Remove 4 nuts.

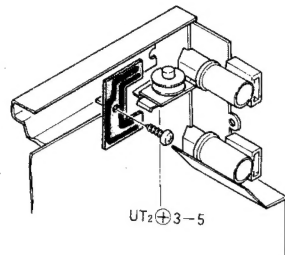
**To Remove Bottom Cover**

- 1) Remove 5 screws.



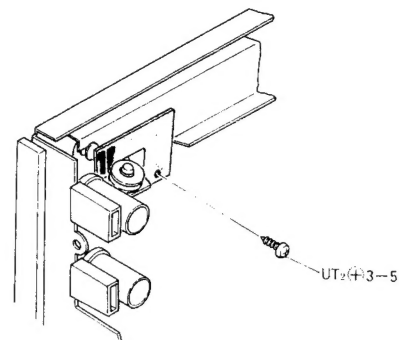
To Remove LED-2 Circuit Board

- 1) Remove mounting screw.



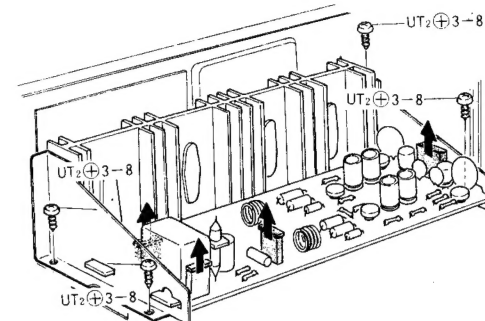
To Remove LED-3 Circuit Board

- 1) Remove mounting screw.



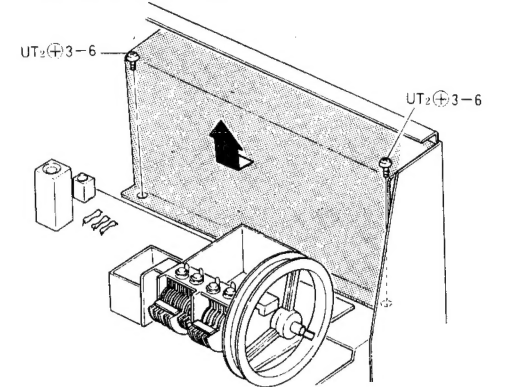
To Remove Main Amp. Circuit Board

- 1) Pull out the 2 connectors.
- 2) Remove 4 screws.



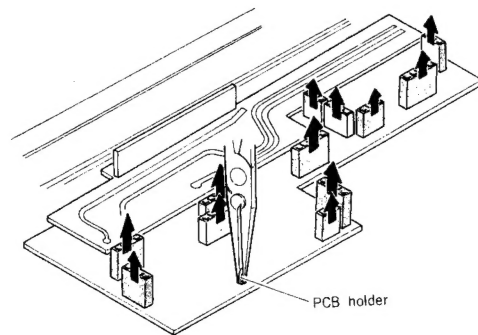
To Remove Jack/Equalizer Circuit Board

- 1) Remove 2 screws.
- 2) Using a soldering iron disconnect one terminal of the capacitor.
- 3) Remove 4 nylon rivets.



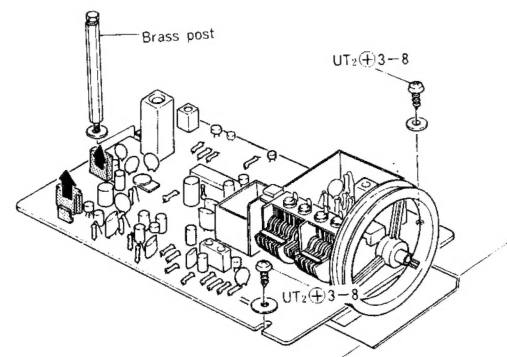
To Remove Pre Amp./Switch Circuit Board

- 1) Remove 4 screws.
- 2) Pull out the 12 connectors.
- 3) Pressing the PCB holder with small pincers or the like, pull the circuit board upward for remove.



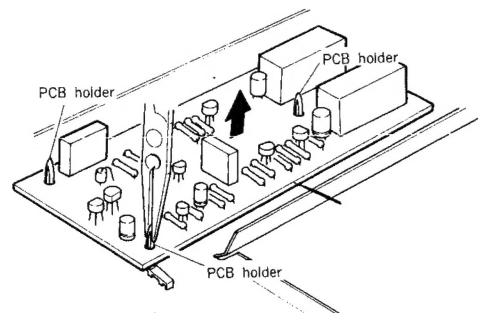
To Remove Tuner Circuit Board

- 1) Remove 2 connectors.
- 2) Remove 2 screws and brass post.



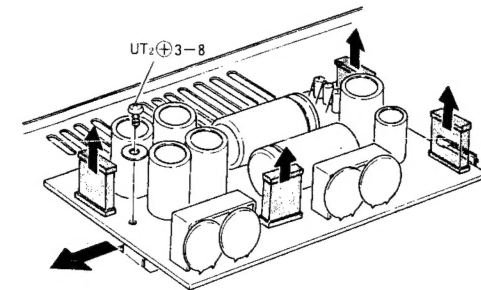
To Remove Muting Circuit Board

- 1) Pull out the 2 connectors.
- 2) Pressing the PCB holders (1 ~ 3) with small pincers or the like, pull the circuit board in arrow direction to remove.

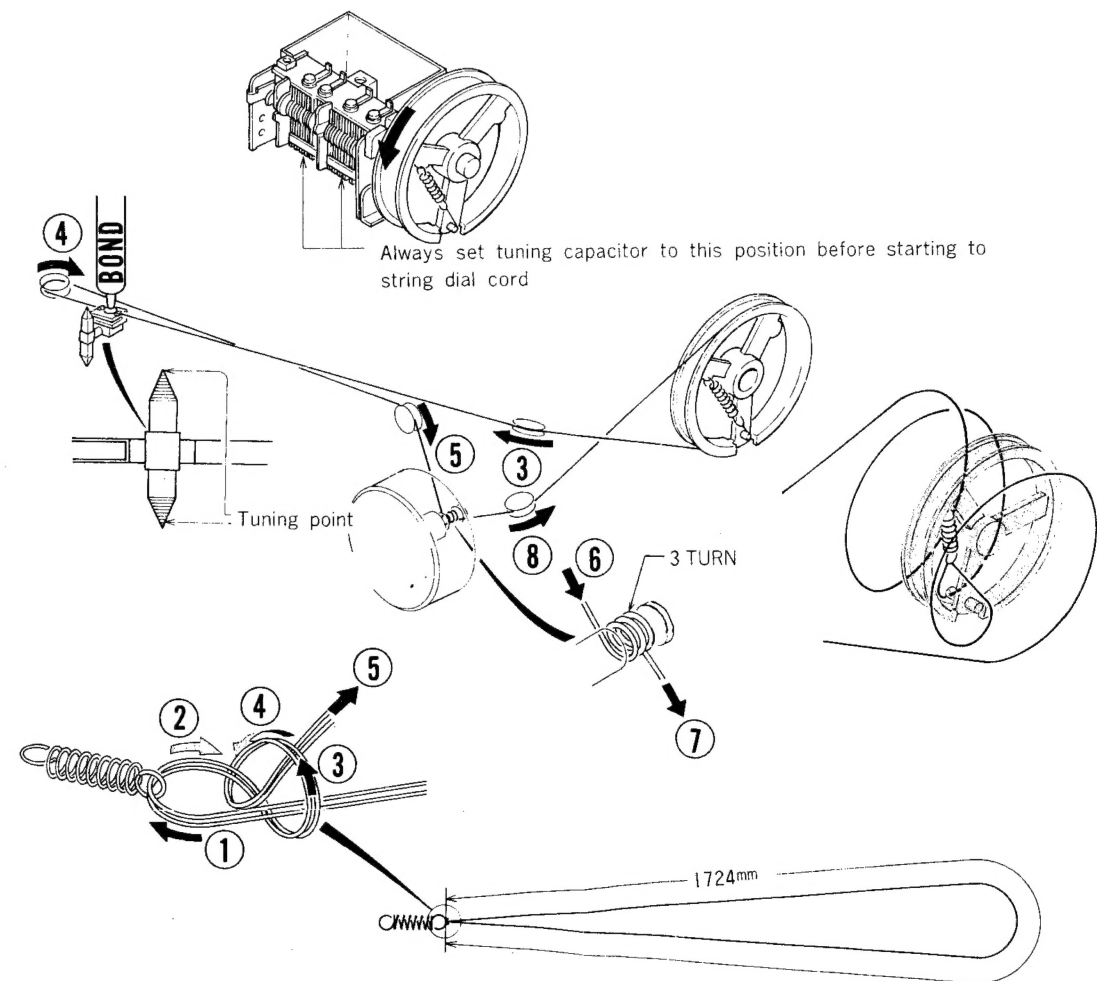


To Remove Power Circuit Board

- 1) Pull out the 4 connectors.
- 2) Remove mounting screw and pull circuit board in arrow direction to remove.

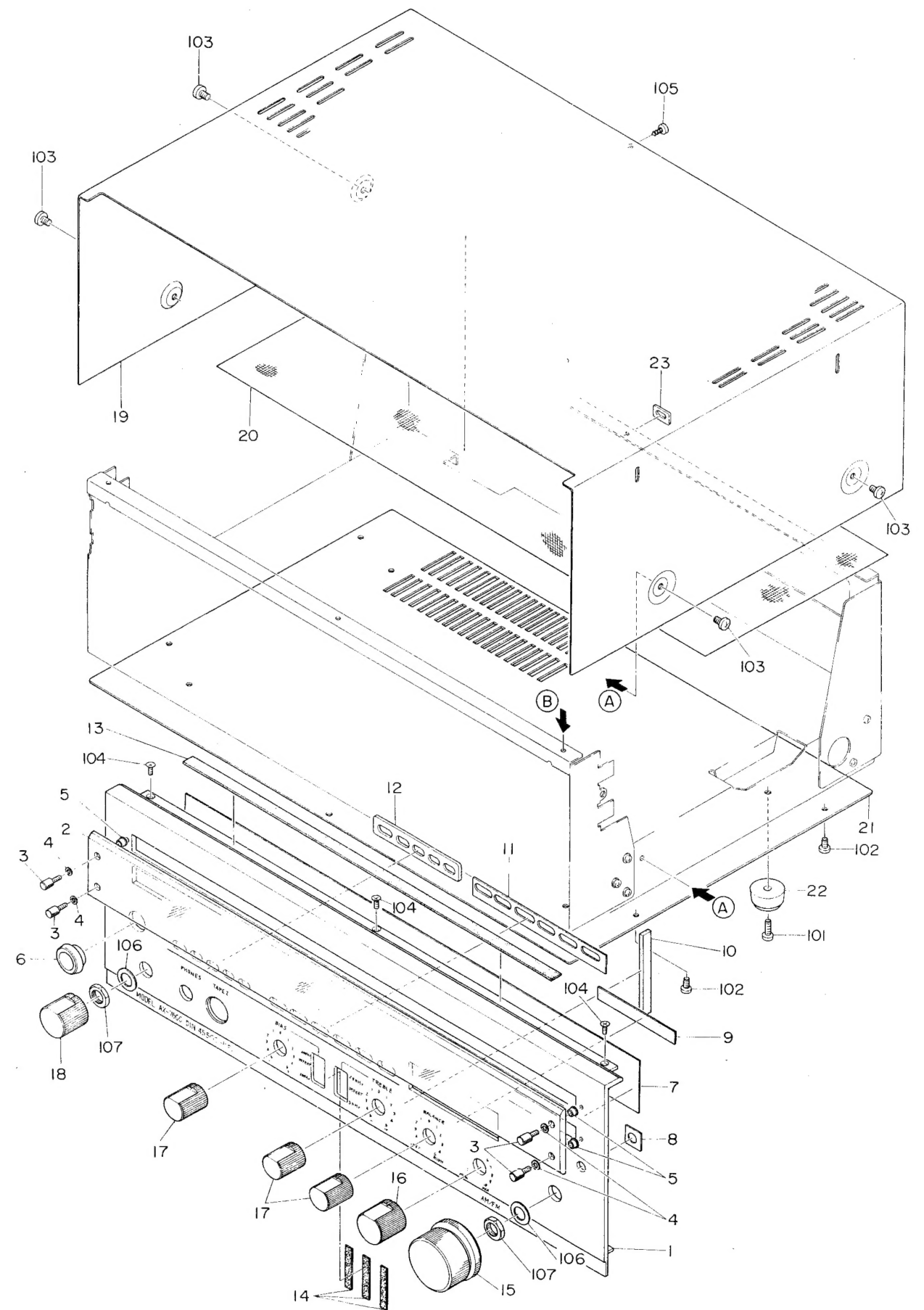


DIAL CORD STRINGING



☆☆☆☆☆☆☆☆☆☆☆☆☆☆ **MEMO** ☆☆☆☆☆☆☆☆☆☆☆☆☆

EXPLODED VIEW-1



MECHANICAL PARTS

PARTS LIST

■ * mark in this part list shows exclusive part
(which is used) for only Model AX-7600.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
1~14	09-047-100-01		Panel Assembly			
1-1	82-489-001-01		Front panel	*	1	
1-2	82-489-002-01		Window, Dial	*	1	
1-3	82-488-016-01		Screw, Window	*	4	
1-4	82-488-024-01		G washer	AX-7400	4	
1-5	82-488-023-01		G sleeve	AX-7400	4	
1-6	82-397-027-01		Ring, AC switch button		1	
1-7	82-489-005-01		Sheet, Dial	*	1	
1-8	82-489-209-01		Guide A, Push button	*	1	
1-9	82-489-220-01		G cushion, Meter	*	1	
1-10	82-489-222-01		S cushion	*	1	
1-11	82-489-204-01		Guide 6, Push button	*	1	
1-12	82-488-207-01		Guide, Button (FUNCTION)	AX-7400	1	
1-13	82-473-273-01		Spacer, Top panel	AX-7500	1	
1-14	82-488-229-01		Spacer, Decorative plate switch	AX-7400	3	
1-15	82-488-008-01		Tuning knob ass'y	AX-7400	1	
1-16	82-488-004-01		Volume knob ass'y	AX-7400	1	
1-17	82-488-006-01		Tone knob ass'y	AX-7400	3	
1-18	82-489-013-01		Speaker selector knob ass'y	*	1	
1-19	82-489-012-01		Panel, Top	*	1	
1-20	82-489-214-01		Net	*	1	
1-21	82-473-004-01		Bottom plate	AX-7500	1	
1-22	87-085-141-01		Leg		4	
1-23	82-380-439-01		Spacer, Rear panel	AD-7600	1	

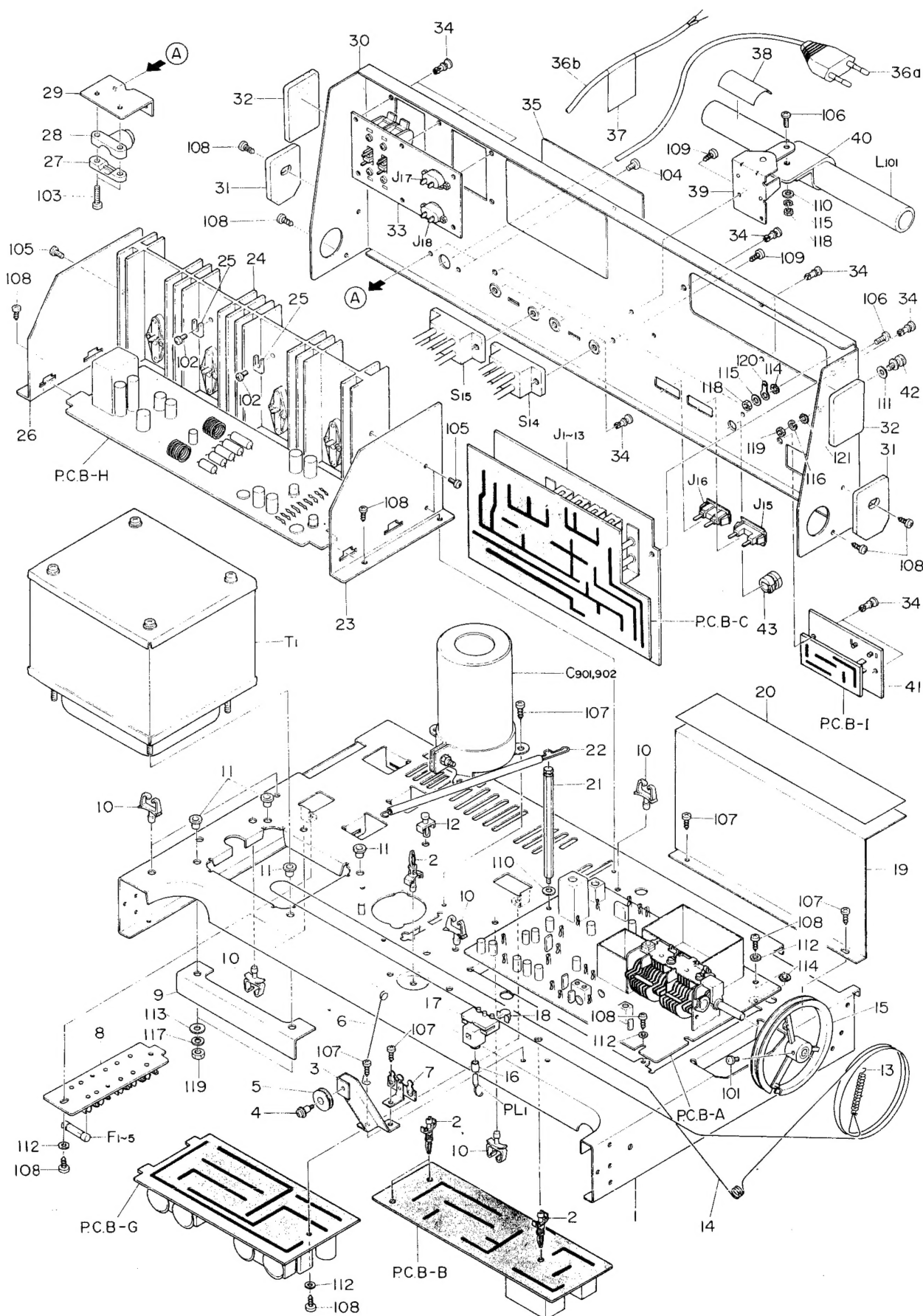
Ref. No.	Part No.	Description	Q'ty	
1-101	87-261-171-21	V + 4-10	4	
1-102	87-257-092-11	U + 3-4(Black)	5	
1-103	87-257-168-11	U + 4-5(Black)	4	
1-104	87-231-094-21	Q + 3-6	3	

Ref. No.	Part No.	Description	Q'ty	
1-105	87-348-094-01	UT ₂ + 3-6(Black)	1	
1-106	87-410-340-01	W9-16-0.5	2	
1-107	87-081-253-11	N-9	2	

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
2-1	82-473-043-01		Spacer, Dial plate	AX-7500	2
2-2	82-473-037-01		Holder B, Dial plate	AX-7500	2
2-3	82-473-224-01		Himeron, Reflector-blocking	AX-7500	2
2-4	82-488-027-01		Holder, Tuning pointer	AX-7400	1
2-5	82-488-017-01		Tuning pointer	AX-7400	1
2-6	82-488-028-01		Tube, Tuning pointer	AX-7400	1
2-7	82-489-007-01		Dial plate, Lower	*	1
2-8	82-489-006-01		Dial plate, Upper	*	1
2-9	82-489-010-01		Dial back plate	*	1
2-10	82-489-218-01		Cushion, Dial	*	1
2-11	82-473-008-01		Holder A, Dial plate	AX-7500	1
2-12	82-473-226-01		Sub cushion, Dial plate	AX-7500	4
2-13	82-473-272-01		Cushion A, Dial plate	AX-7500	2
2-14	82-489-201-01		Front chassis	*	1
2-15	82-473-262-01		Collar, Stopper	AX-7500	2
2-16	82-489-224-01		Collar, Knob	*	1
2-17	82-473-207-01		Tuning shaft ass'y	AX-7500	1
2-18	82-473-259-01		Tuning, Flywheel	AX-7500	1
2-19	82-380-455-01		Spacer, Side panel	AD-7600	2
2-20	82-473-216-01		Holder, Roller C	AX-7500	1
2-21	82-473-220-01		Roller	AX-7500	3
2-22	87-081-483-01		Motor screw M2.6		2
2-23	82-489-206-01		Holder F, Roller	*	1
2-24	82-489-213-01		Cushion, Meter	*	1
2-25	82-489-210-01		Holder, Meter	*	1
2-26	82-422-283-01		Mirror, Reflector	TPR-203	1
2-27	82-422-284-01		Lamp bushing	TPR-203	1
2-28	82-473-231-01		Plate, Reflector	AX-7500	4
2-29	82-473-232-01		Lamp, Packing	AX-7500	4
2-30	87-032-503-01		Socket, Pilot lamp		4
2-31	82-489-202-01		Holder, Dial plate	*	1
2-32	82-489-207-01		Cushion	*	1
2-33	82-397-033-01		AC switch button ass'y	AD-7500	1
2-34	82-489-216-01		Holder, Switch	*	1
2-35	82-489-211-01		Roller holder G	*	1
2-36	82-473-255-01		Adjusting plate, Roller	AX-7500	1
2-37	82-473-254-01		Adjusting screw, Roller	AX-7500	1
2-38	82-489-221-01		Insulation cover	*	1
2-39	82-380-292-01		Collar, AC holder	AD-7600	2
2-40	82-473-261-01		Push collar	AX-7500	4
2-41	82-489-009-01		Push button (FUNCTION)	*	5
2-42	82-489-008-01		Push button (SELECTOR)	*	6
2-43	82-489-203-01		Holder A	*	1
2-44	82-473-274-01		Lamp bushing	AX-7500	1
2-45	87-064-038-01		Wire clip A		1
2-46	82-488-020-01		Knob lever	AX-7400	2
2-47	82-488-019-01		Decorative plate, Switch	AX-7400	2
2-48	82-488-022-01		Knob holder	AX-7400	2
2-49	82-473-251-01		DIN collar	AX-7500	2
2-50	82-489-003-01		AFC button	*	1
2-51	82-422-251-01		Poly-slider washer	TPR-203	1

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
2-101	87-261-092-21	V + 3-4	8	2-108	87-343-093-21	UT ₂ + 3-5	2
2-102	87-261-093-21	V + 3-5	2	2-109	87-343-094-21	UT ₂ + 3-6	2
2-103	87-251-072-21	U + 2.6-5	4	2-110	87-480-072-01	VS + 2.6-5	1
2-104	87-251-075-21	U + 2.6-10	1	2-111	87-480-093-11	VS + 3-5	2
2-105	87-251-094-21	U + 3-6	2	2-112	87-510-095-01	VTF + 3-8	6
2-106	87-231-036-21	Q + 2-8	2	2-113	87-081-034-01	WF5-10-1	1
2-107	87-231-095-21	Q + 3-8	4	2-114	87-081-253-11	N-9	1

EXPLODED VIEW-3



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
3-1	82-473-205-01		Chassis	AX-7500	1
3-2	87-064-061-01		Holder B, Circuit board		4
3-3	82-473-217-01		Holder D, Roller	AX-7500	1
3-4	87-081-483-01		Motor screw, M2.6		1
3-5	82-473-220-01		Roller	AX-7500	1
3-6	82-471-212-01		Guide, Dial wire	AF-5080	1
3-7	87-033-001-01		Lug, 1L-2P		1
3-8	82-473-717-01		Fuse holder	AX-7500	1
3-9	82-473-256-01		Reinforcement plate, Chassis	AX-7500	1
3-10	87-064-051-01		Wire clip F		7
3-11	82-473-267-01		Collar, Power transformer	AX-7500	4
3-12	87-064-060-01		Holder, Circuit board		1
3-13	82-473-252-01		Spring, Tuning dial drum	AX-7500	1
3-14	87-096-086-01		String, Tuning dial		1
3-15	82-473-211-01		Tuning dial drum	AX-7500	1
3-16	87-830-102-01		UL tube 1.6φ 20		1
3-17	82-473-018-01		Holder, Pointer	AX-7500	1
3-18	82-473-019-01		Lock plate, Pointer	AX-7500	1
3-19	82-473-206-01		Shield, Phono	AX-7500	1
3-20	82-473-242-01		Label, Phone shield	AX-7500	1
3-21	82-473-241-01		Brasspost, Cord	AX-7500	1
3-22	82-473-250-01		Spring, Cord support	AX-7500	1
3-23	82-489-641-01		Holder R, Heatsink plate	*	1
3-24	82-489-625-01		Heatsink	*	1
3-25	82-473-611-01		Diode, STU-3H	AX-7500	2
3-26	82-489-642-01		Holder L, Heatsink plate	*	1
3-27	87-085-095-01		Holder B, AC power cord		1
3-28	87-085-094-01		Holder A, AC power cord		1
3-29	82-473-257-01		Holder, AC power cord	AX-7500	1
3-30	82-473-055-01		Back panel	AX-7500	1
3-31	82-473-247-01		Spacer B, Side panel	AX-7500	2
3-32	82-473-245-01		Spacer A, Side panel	AX-7500	2
3-33	82-473-703-01		Speaker terminal	AX-7500	1
3-34	87-085-102-01		Nylon rivet, 3.5—5.5		16
3-35	82-489-004-01		Name plate, Spec.	*	1
3-36a	87-034-835-01		AC power cord (EE model only)		1
3-36b	87-034-872-01		AC power cord (UK model only)		1
3-37	87-056-008-01		Label, AC power cord (UK model only)		1
3-38	82-473-051-01		Caution label, Antenna	AX-7500	1
3-39	82-473-010-01		Antenna holder ass'y	AX-7500	1
3-40	82-473-013-01		Holder C, Antenna	AX-7500	1
3-41	82-473-626-01		Terminal screw 4P	AX-7500	1
3-42	87-033-088-01		Earth terminal		1
3-43	87-085-101-01		Cord bushing		1

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
3-101	87-261-093-21	V + 3-5	2	3-112	87-081-017-01	WF3-8-1	4
3-102	87-261-096-21	V + 3-10	2	3-113	87-081-021-01	WF6-13-1	4
3-103	87-263-099-01	V + 3-15	2	3-114	87-433-904-01	WTIE-3	2
3-104	87-257-092-11	U + 3-4(Black)	2	3-115	87-421-306-01	SW-3	2
3-105	87-251-094-21	U + 3-6	4	3-116	87-421-308-01	SW-4	1
3-106	87-257-097-11	U + 3-12(Black)	2	3-117	87-421-310-01	SW-6	4
3-107	87-343-094-21	UT ₂ + 3-6	7	3-118	87-391-017-11	N3-5.5-2.4	2
3-108	87-343-095-21	UT ₂ + 3-8	12	3-119	87-391-036-01	N-5-8-4	5
3-109	87-348-095-01	UT ₂ + 3-8(Black)	5	3-120	87-450-414-01	LB-4	1
3-110	87-410-314-01	W3-8-0.3	2	3-121	87-433-906-01	WTIE-4	1
3-111	87-410-326-01	W4-10-1	1				

HARDWARE NOMENCLATURE

V: Pan head screw



W: Washer



U: Binding head screw



FW: Fiber washer

Q: Flat countersunk head screw



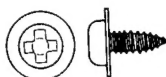
SW: Spring washer

UT₂: Binding head tapping screw

WTIE: Crown washer



VTF: Flange and Pan head tapping screw



LB: Lug terminal plate



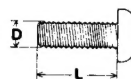
VS: Pan head screw with spring washer



N: Nut



Example:



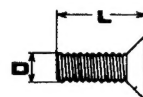
V + 3 - 6

Length in mm

Diameter in mm

Type of Slot

Type of Head



Q + 3 - 6

Length in mm

Diameter in mm

Type of Slot

Type of Head

ACCESSORIES/PACKAGE

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
1	82-489-851-01		Printed indiv., Packing	*	1	
2	82-489-852-01		Cushion L, Printed indiv.	*	1	
3	82-489-853-01		Cushion R, Printed indiv.	*	1	
4	87-056-500-01		Curl stopper		2	
5	87-056-551-01		Poly-vinyl sack (for case)		1	
6	87-051-171-01		Poly-vinyl sack (for instruction)		1	
7a	82-489-901-01		Instructions booklet (EE model only)	*	1	
7b	82-489-902-01		Instructions booklet (UK model only)	*	1	
8	87-056-009-01		Distributors list		1	
9	87-058-023-01		Cord binder		1	
10	87-043-025-01		FM antenna		1	
11	87-056-549-01		Poly-vinyl sack (for AC cord)		1	
12	82-473-861-01		Cushion, Bar antenna	AX-7500	1	

ELECTRICAL MAIN PARTS LIST

Symbol No.	Part No.	Description
« TUNER CIRCUIT BOARD SECTION »		
PCB-A	82-489-601-01	Tuner circuit board
IC1	82-481-727-01	IC, HA1156W
IC151	82-489-636-01	IC, μ PC-78L12
Q1	89-307-103-01	Transistor, 2SC710 (C)
Q2,3	89-319-233-01	Transistor, 2SC1923 (O)
Q4,5,6,7	89-303-813-01	Transistor, 2SC381 (O)
Q8,104	87-026-045-01	Transistor, 2SC380A (O)
Q9,10,11	89-309-456-01	Transistor, 2SC945L (P)
Q101,102	89-303-804-01	Transistor, 2SC380 (Y)
Q103	89-303-803-01	Transistor, 2SC380 (O)
FET1,2	87-026-128-01	FET, 3SK59 (BL)
FET3	87-027-240-01	FET, 2SK61 (GR)
D1	87-026-049-01	Diode, 1S2139 (B)
D2,3,9,10,11, 102,103	87-027-097-01	Diode, 1S1555
D4,5,6,7,8, 101	88-052-188-01	Diode, 1S188 (FM)
L1	82-473-729-01	FM antenna coil
L2	82-489-609-01	FM coil, RF-1
L3	82-489-621-01	FM coil, RF-2
L4	82-489-610-01	FM OSC coil
L5,10	82-470-604-01	Coil, 2.2 μ H
L6,7,11	87-005-101-01	Coil, 2.2 μ H
L8	82-473-628-01	Coil, 8.2mH
L9	87-005-088-01	Coil, 5.6mH
L102	82-457-699-01	MW OSC coil
IFT1	82-489-645-01	FM IFT
IFT2	84-173-614-01	FM IFT
IFT3	87-008-159-01	FM IFT (Ratio)
IFT101	87-008-160-01	MW IFT (DET)
VC1~6	82-489-602-01	VC
TC1~5		
TC4	82-489-603-01	Trimmer
CF1~4	87-030-053-01	FM ceramic filter (EE model only)
CF1~4	87-030-054-01	FM ceramic filter (UK model only)
CFT101	87-008-118-01	MW ceramic filter transformer (EE model only)
CFT101	87-008-152-01	MW ceramic filter transformer (UK model only)
SFR1	87-021-366-01	Semi-fixed resistor, 10k Ω -B
PIN-A	87-032-653-01	Pin, 3P
PIN-B	87-032-773-01	Pin, 3P
< Resistors >		
R129	82-489-640-01	100 Ω 1W Metal film resistor
R72,73	82-481-711-01	3.6k Ω Metal film resistor
< Capacitors >		
C18	88-254-292-01	47pF Ceramic
C19	88-254-152-01	15pF Ceramic
C20	88-255-082-01	8pF Ceramic
C23,25	88-254-032-01	3pF Ceramic
C68,69	82-481-710-01	0.015 μ F PP
« MUTING CIRCUIT BOARD SECTION »		
PCB-B	82-481-694-01	Muting circuit board
Q1,2,3,4,6,7,8	89-309-456-01	Transistor, 2SC945L (P)
Q5,9,10	89-107-336-01	Transistor, 2SA733 (P)
D1,2,4,5,6	87-027-097-01	Diode, 1S1555
D3	88-052-188-11	Diode, 1S188 (FM)
D7	87-027-097-01	Diode, 1S1555
LPF1,2	82-481-709-01	Low pass filter
SFR1	87-021-387-01	Semi-fixed resistor, 10k Ω -B
PIN-X	87-032-773-01	Pin, 3P
PIN-W	87-032-777-01	Pin, 7P

Symbol No.	Part No.	Description
« EQ AMP CIRCUIT BOARD SECTION »		
PCB-C	82-473-608-21	EQ amp circuit board
Q1,2,3,4	82-473-644-01	Transistor, 2SA750 (DA)
Q5,6,7,8	82-473-645-01	Transistor, 2SC1400 (DA)
Q9,10	89-317-354-01	Transistor, 2SC1735 (E)
J1~13	82-473-625-01	Pinjack 12P (PHONO, AUX, TAPE-2 PLAY, REC, TAPE-1 PLAY, REC, DIN)
< Resistors >		
R25,26	82-473-676-01	3.9k Ω 1W Metal film resistor
R23,24	82-473-683-01	68.1k Ω 1/4W \pm 2% Metal film resistor
< Capacitors >		
C1,2	87-015-244-01	4.7 μ F 50V Electrolytic LL
C9,10	82-473-684-01	3900pF \pm 2% PP
C11,12	82-473-685-01	1100pF \pm 2% PP
C15,16	82-473-681-01	4.7 μ F 50V Electrolytic BP
« PRE AMP/SWITCH CIRCUIT BOARD SECTION »		
PCB-D	82-489-611-01	PRE amp/switch circuit board
Q1,2,3,4,5,6	87-309-456-01	Transistor, 2SC945L (P)
S1~6	82-489-615-01	Push switch (SELECTOR SW)
S8,9,10,13,16	82-489-614-01	Push switch (FM MUTING, HIGH FILTER, RUMBLE FILTER, LOUDNESS, STEREO/MONO)
PIN-H	87-032-437-01	Pin, 3P
PIN-G,J,N	87-032-653-01	Pin, 3P
PIN-C,K,L	87-032-654-01	Pin, 4P
PIN-D,E,M	87-032-655-01	Pin, 5P
PIN-F	87-032-656-01	Pin, 6P
PIN-I	87-032-657-01	Pin, 7P
< Resistor >		
R59	82-473-708-01	1.5k Ω 1W Metal film resistor
« SWITCH CIRCUIT BOARD SECTION »		
PCB-E	82-489-612-01	Switch circuit board
« TONE CIRCUIT BOARD SECTION »		
PCB-F	82-489-613-01	Tone circuit board
Q1,2	89-107-505-01	Transistor, 2SA750 (E)
Q3,4	89-314-005-01	Transistor, 2SC1400 (E)
Q5,6	89-309-456-01	Transistor, 2SC945L (P)
Q7,8	89-309-458-01	Transistor, 2SC945L (R)
VR1,2	82-489-616-01	Volume, 100k Ω -B (VOLUME)
VR3,4	82-489-617-01	Volume, 50k Ω -MN (BALANCE)
VR5,6,7,8	82-489-618-01	Volume, 50k Ω A (TREBLE, BASS)
S17,18	87-031-409-01	Lever switch (TURNOVER FREQUENCY/DEFEAT SELECTOR)
< Resistor >		
R9,10	82-473-705-01	6.8k Ω 1W Metal film resistor
< Capacitors >		
C1,2	87-015-244-01	4.7 μ F 50V Electrolytic LL
C9,10	82-473-681-01	4.7 μ F 50V Electrolytic BP
« POWER CIRCUIT BOARD SECTION »		
PCB-G	82-473-602-11	Power circuit board
Q1	89-402-344-01	Transistor, 2SD234 (Y)
Q2	89-106-844-01	Transistor, 2SA684 (R)
D1,2	87-027-144-01	Zener diode, WZ350
D3,4,5,6,9	87-027-083-01	Diode, 1S1885
D7	87-027-149-01	Diode, SS-3
D8	87-027-150-01	Diode, SS-3R
PIN-S,T,U,V	87-032-437-01	Pin, 3P
< Resistor >		
R5,6	82-473-708-01	1.5k Ω 1W Metal film resistor

15

ADJUSTMENTS

● Instruments Required

Signal Source

1. RF Signal generator (AM, FM).
2. IF sweep generator (Centered 455/468 kHz for AM and 10.7 MHz for FM).

Output Indicator

1. V.T.V.M.
2. Oscilloscope

● Regulator Adjusting Steps

For band	For stages on each band
1. AM (MW)	1st: IF 2nd: RF frequency range 3rd: RF tracking
2. FM	1st: IF 2nd: RF frequency range 3rd: RF tracking

AM-IF Alignment

Step	Signal source	Set signal to	Alignment indicator	Set radio dial to	Adjust	Adjust for
	Connect to		Connect to			
1	AM IF sweep gen.	Sweep centered 455kHz (EE) 468 kHz (UK)	Oscilloscope	Min. Freq	CFT101 IFT 101	Maximum
	TP 3 (AM IF input)		AM det. output tab			

AM-RF-Alignment

Step	Signal source	Set signal to	Alignment indicator	Set radio dial to	Adjust	Adjust for
	Connect to		Connect to			
1	AM signal gen	515 kHz (Modulated)	V.T.V.M.	515 kHz (Low end)	L102 (OSC coil)	Maximum
	Loop antenna		AM det. output tab			
2	Loop antenna	1650 kHz (Modulated)	AM det. output tab	1650 kHz (High end)	TC-5 (OSC trim.)	Maximum
3	(Repeat steps 1 and 2 to obtain frequency range.)					
4	Loop antenna	600 kHz (Modulated)	AM det. output tab	600 kHz	L101 (ANT coil)	Maximum
5	Loop antenna	1400 kHz (Modulated)	AM det. output tab	1400 kHz	TC-5 (ANT trim.)	Maximum
6	(Repeat steps 4 and 5 to minimize tracking error, and also step 3 if necessary.)					

FM-IF Alignment

Step	Signal source	Set signal to	Alignment indicator	Set radio dial to	Adjust	Adjust for
	Connect to		Connect to			
1	FM IF sweep gen.	Sweep centered 10.7 MHz	Oscilloscope	Max. Freq.	IFT1 IFT2	Max Symmetrical response equal height
	TPI (FM IF input)		FM det. output tab			
2	TPI (FM IF input)	Sweep centered 107. MHz	FM det. output tab	Max. Freq.	IFT3	Symmetrical response centered 10.7 MHz
3	(Repeat 1 and 2 to obtain a balanced "S" curve linearity.)					

FM-RF Alignment

Step	Signal source	Set signal to	Alignment indicator	Set radio dial to	Adjust	Adjust for
	Connect to		Connect to			
1	FM signal gen.	87 MHz (Modulated)	V.T.V.M.	87 MHz	L4 (OSC coil)	Maximum
	Antenna terminal		FM det. output tab			
2	Antenna terminal	109 MHz (Modulated)	FM det. output tab	109 MHz	TC-4 (OSC trim)	Maximum
3	(Repeat steps 1 and 2 to obtain frequency range.)					
4	Antenna terminal	88 MHz (Modulated)	FM det. output tab	88 MHz	L1 (ANT coil) L2 (RF coil) L3 (RF coil)	Maximum
5	Antenna terminal	108 MHz (Modulated)	FM det. output tab	108 MHz	TC-1 (ANT trim) TC-2 (RF trim) TC-3 (RF trim)	Maximum
6	(Repeat steps 4 and 5 to minimize tracking error, and step 3 if necessary.)					

MPX Adjustment

• 19 kHz

Conditions:
Selector switch: FM
ST/MONO switch: STEREO
Dial position: detuned from station
Adjust SFR1 for 19 kHz \pm 30 Hz frequency at 19 kHz test point (TP-5).

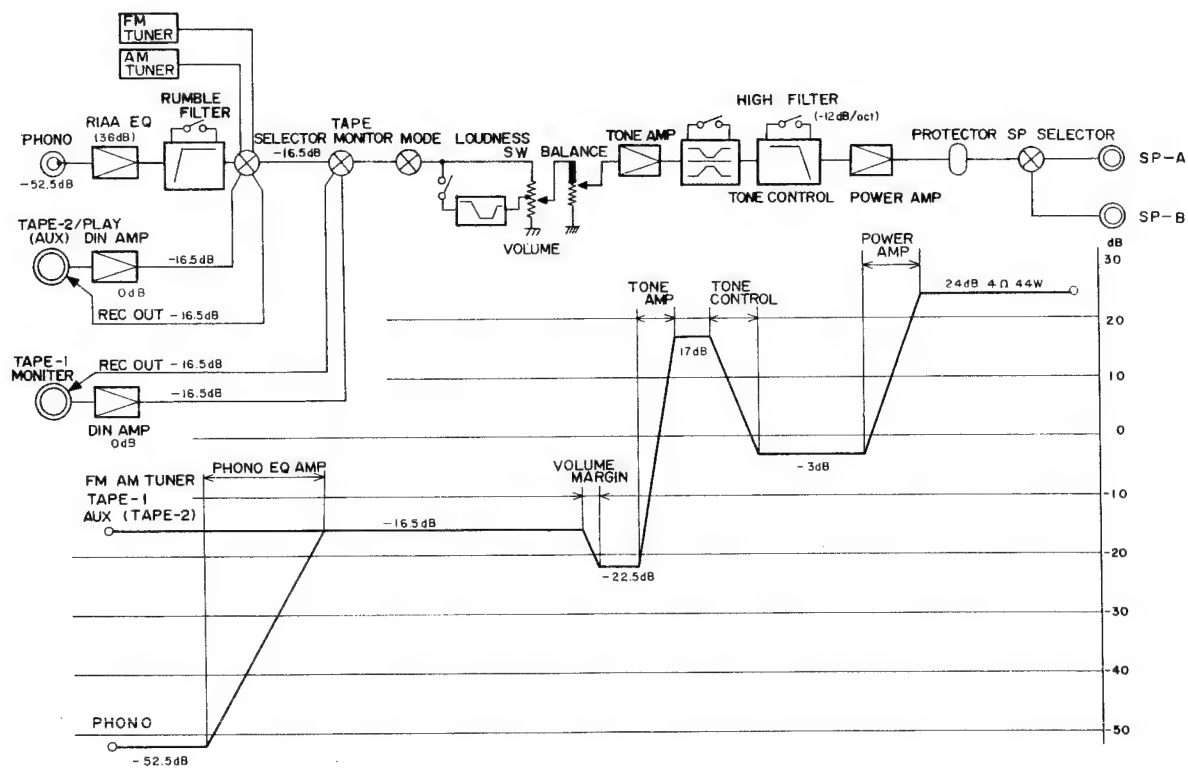
• MPX

Conditions:
Carrier frequency: 98 MHz
Input Signal: 60 dB
Modulation: Pilot signal 10%
Composite signal 90%
Modulation frequency: 1 kHz
Tune dial to 98 MHz and adjust SFR1 for optimum separation (45 dB).

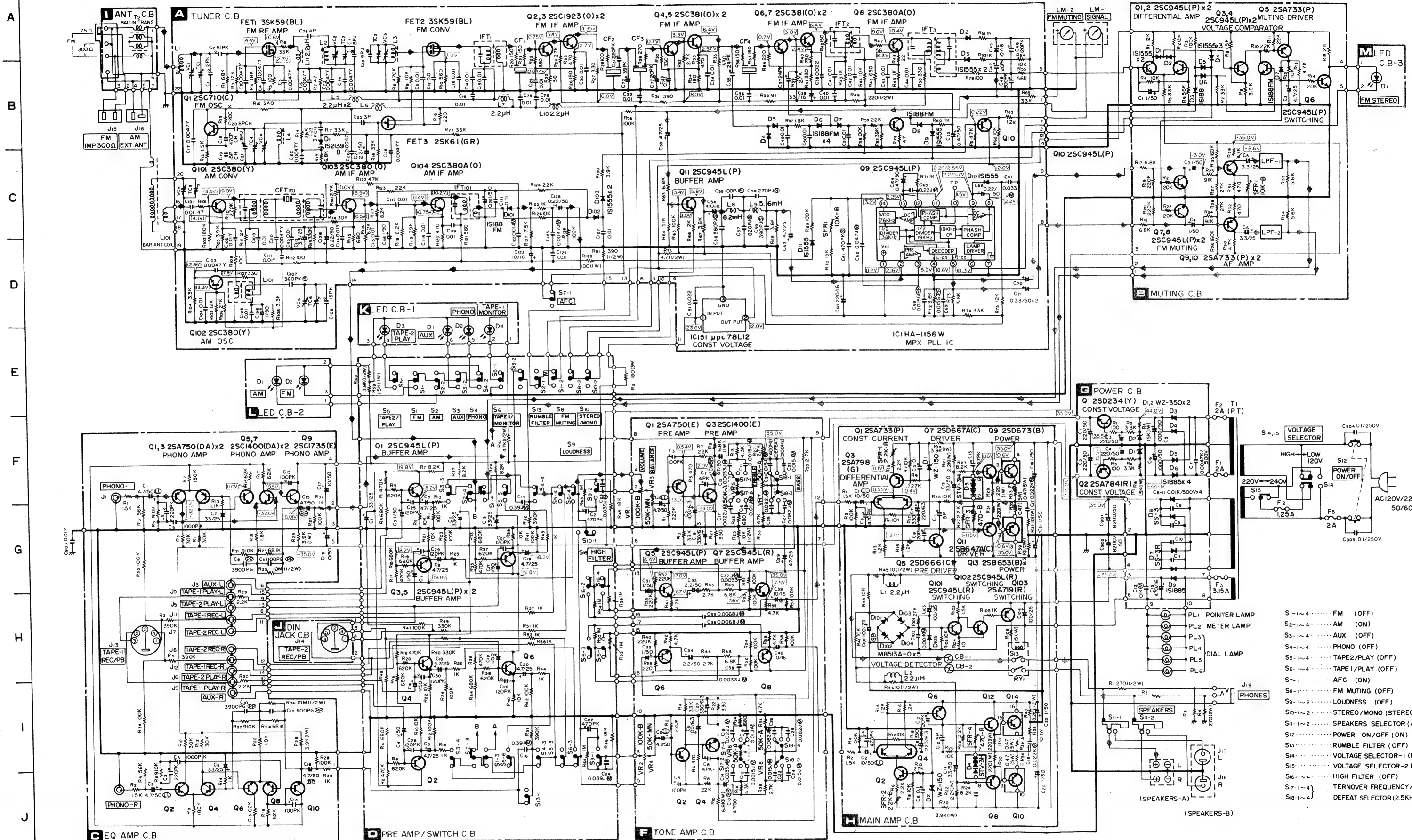
How to change the upper limit of FM frequency range from 109 MHz to 104 MHz.

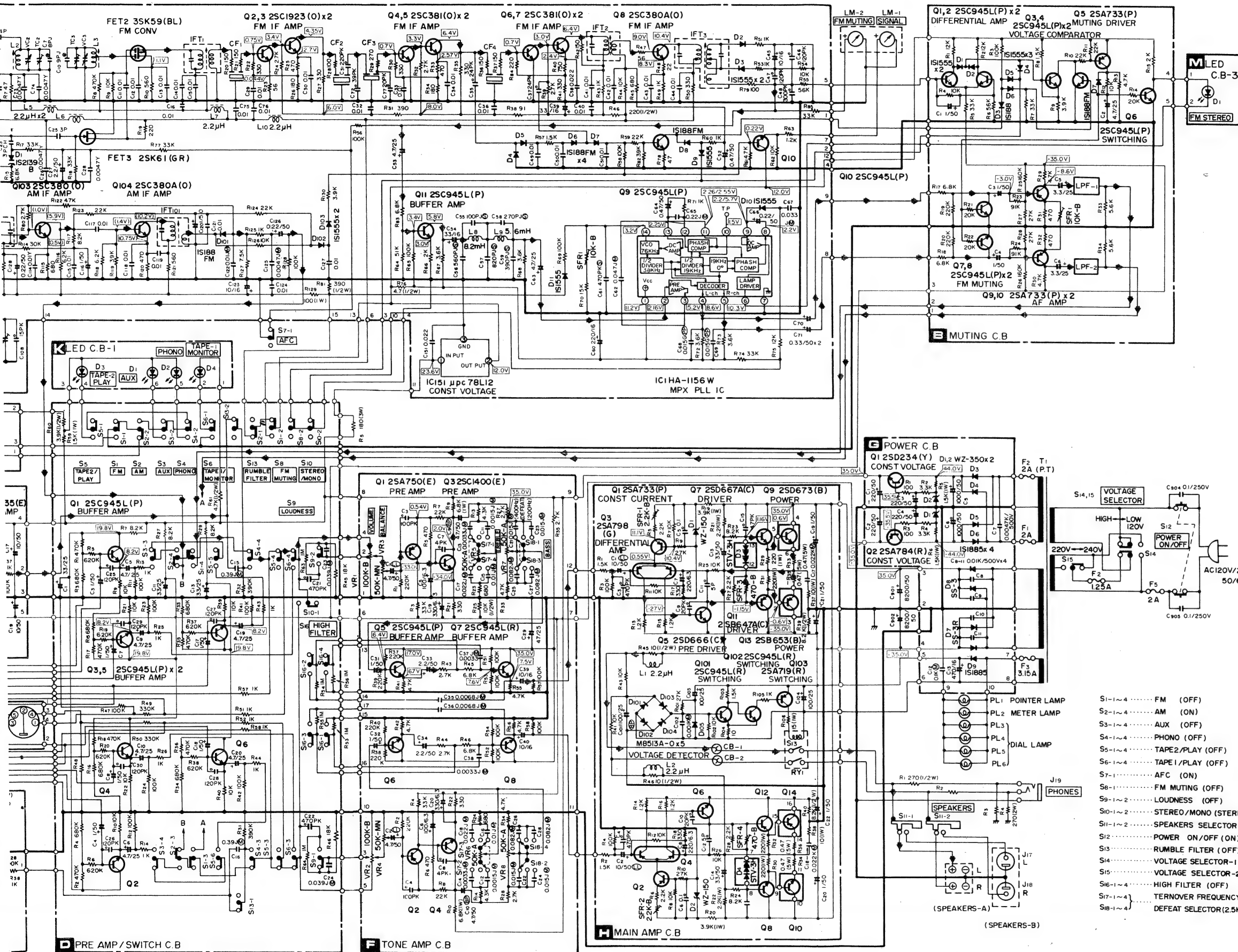
Symbol No.	Description	109 MHz		104 MHz	
L4	FM COIL	1-1/2t aluminum core	82-489-610-01	3/4t ferrite core	99-489-001-01
C21	Ceramic Capacitor	18pF	88-251-180-01	27pF	88-212-230-01

LEVEL DIAGRAM













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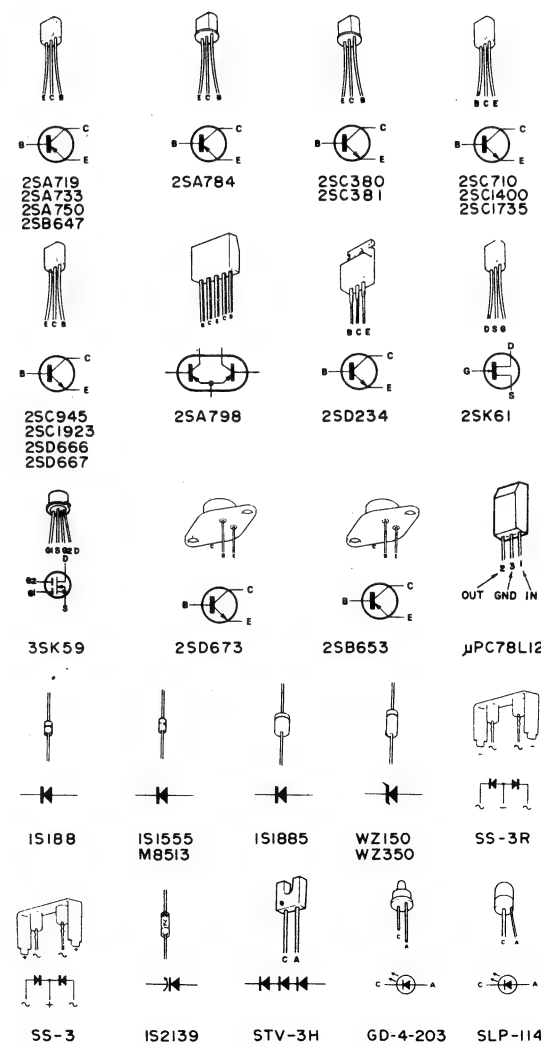




NOTES:

- 1) — B(+) power supply. — B(-) power supply
- 2) ➡ Signal path
➡ AM signal path
- 3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
But () is with AM reception.
- 4) Resistors with no designation have a rated power of $\frac{1}{4}W$ and a tolerance of $\pm 5\%$.
- 5) Capacitors with no designation have a dielectric strength of less than 50WV.
- 6) Ceramic capacitor symbols:
 For temperature compensation (SH)
 For temperature compensation (SL)
 High dielectric constant system (YY)
 High dielectric constant system (YZ)
- 7) The only capacitor tolerances indicated are $\pm 2\%$ (G), $\pm 5\%$ (J) and $\pm 10\%$ (K).
- 8) Explanation of symbols
 Mylar capacitor
 Styrol capacitor
 Tantalum capacitor
 Low-leakage capacitor
 Polypropylene film capacitor
 Low-noise resistor

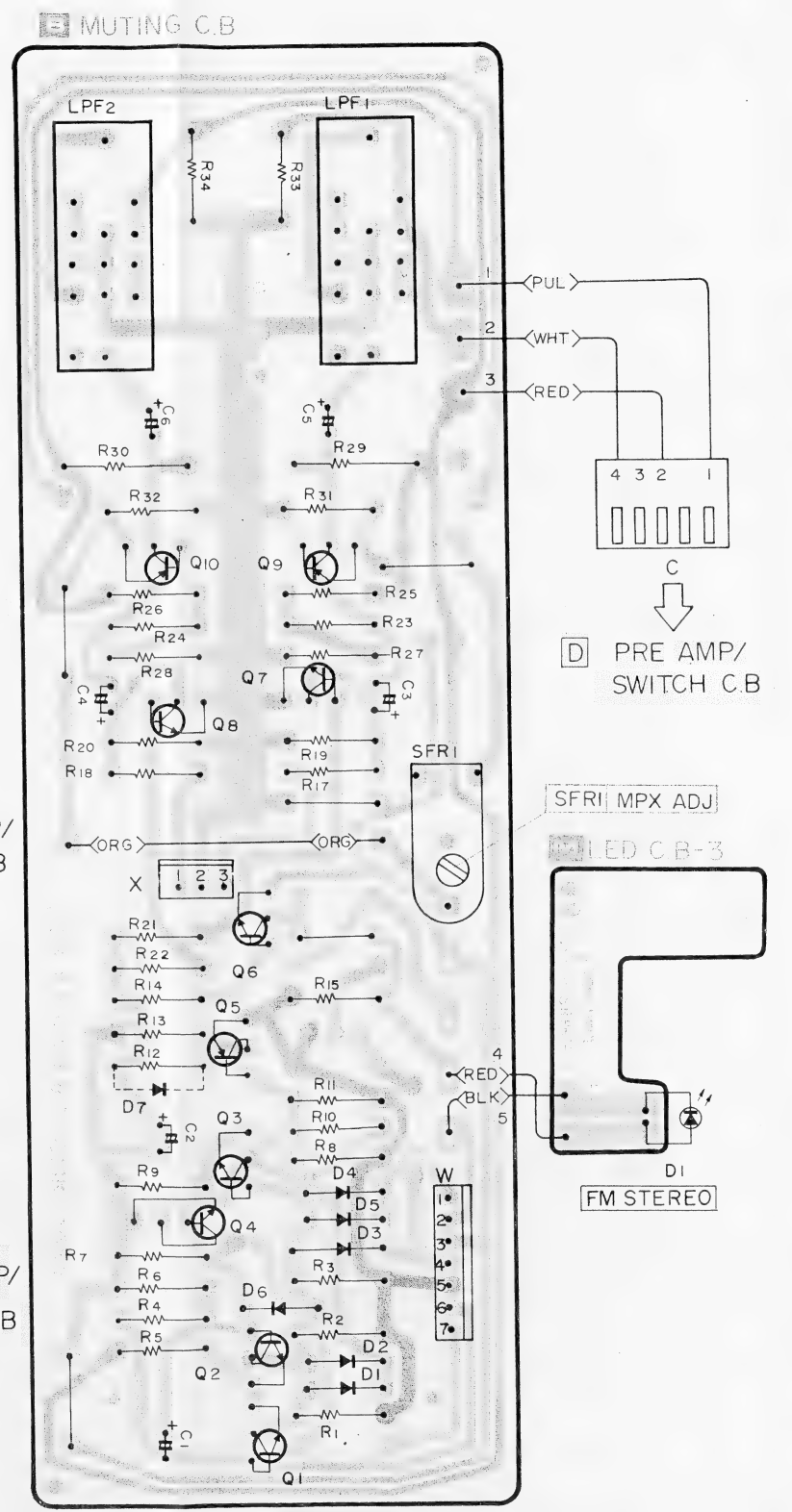
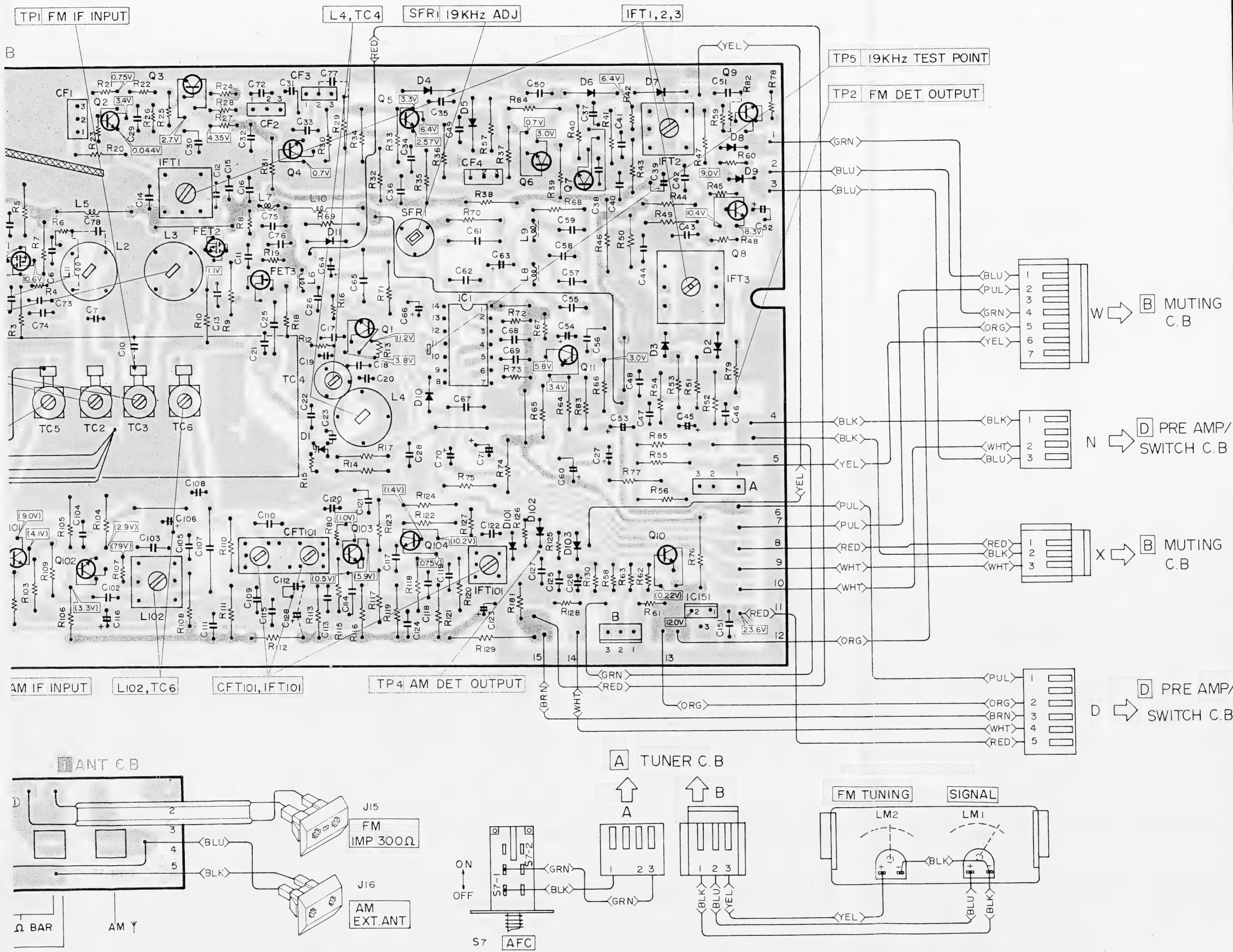
This schematic diagram is subject to change without notice in the interests of improved performance.



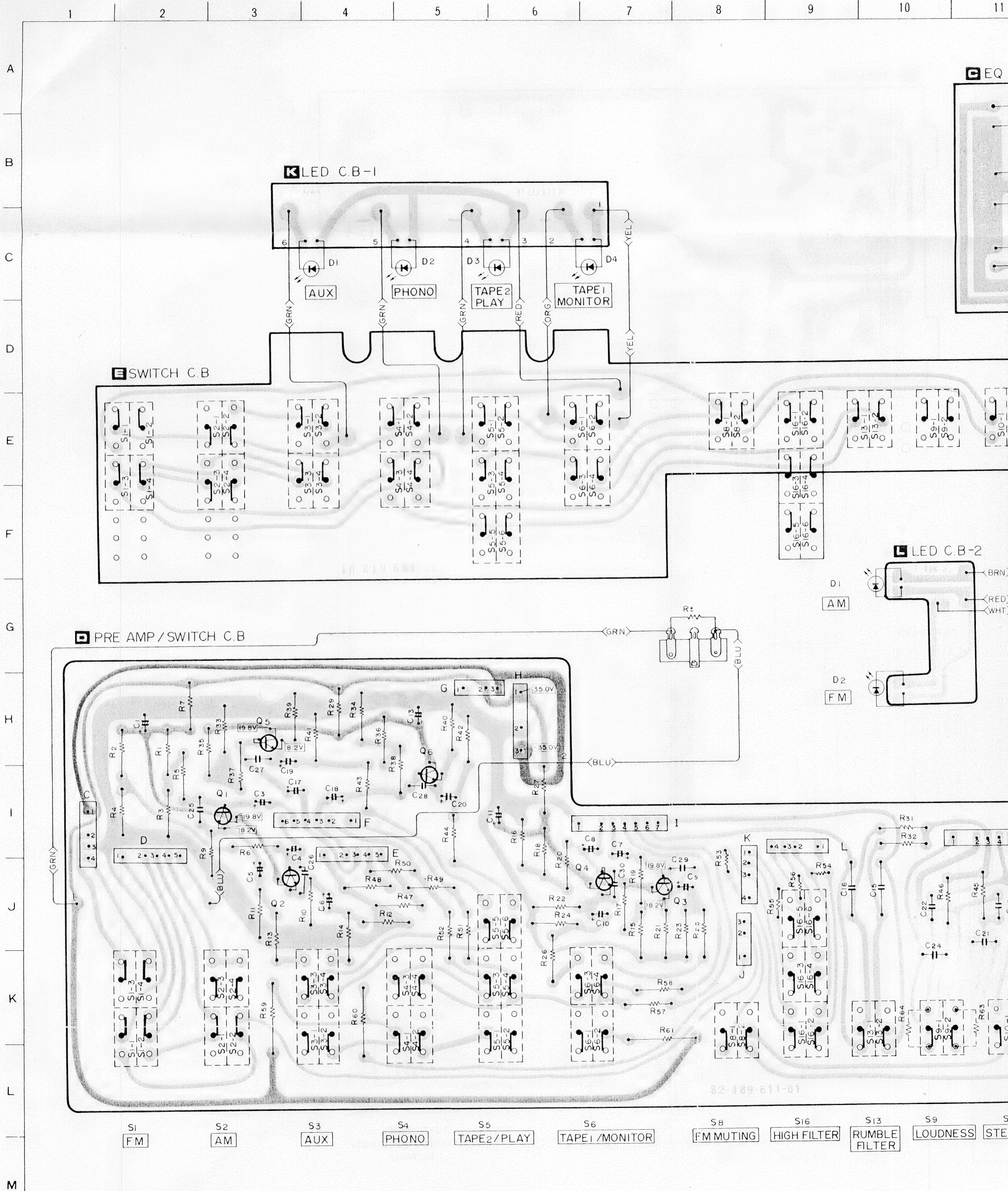
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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NOTES (1) B(+) Pattern B(-) Pattern Others pattern (2) The voltage is the reference value measured with a tester (20K ohms/VDC) when there are no signals.



WIRING-2



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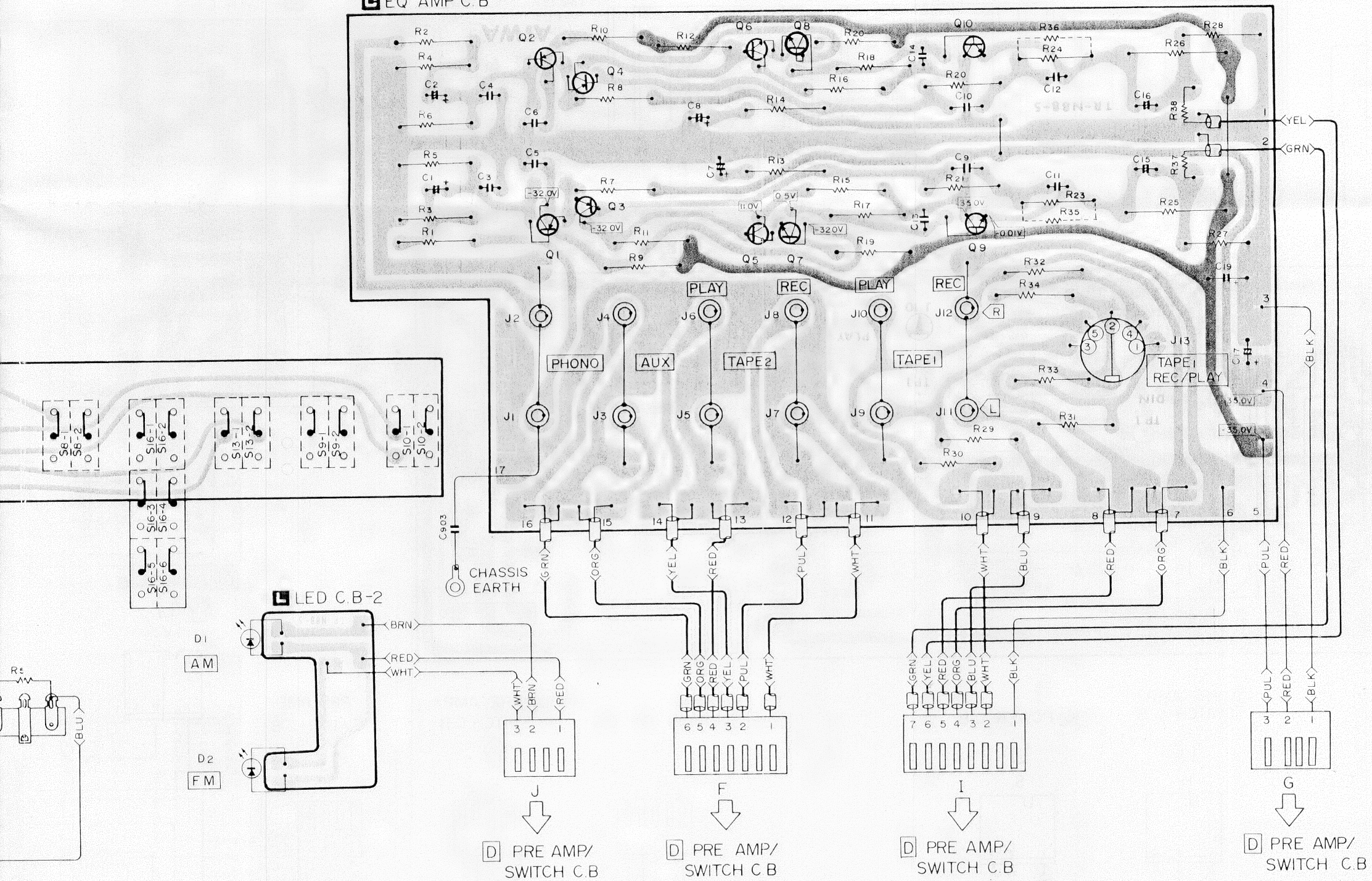
16

17

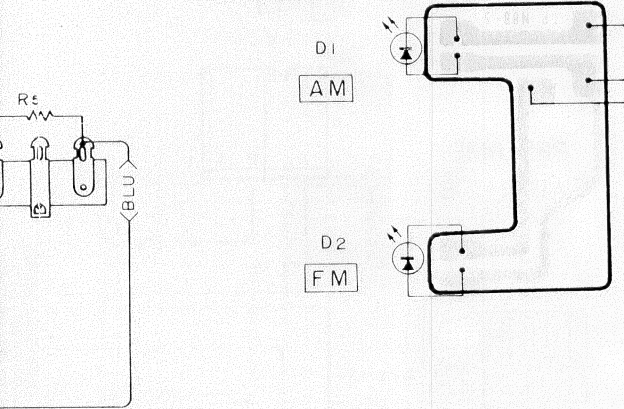
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19

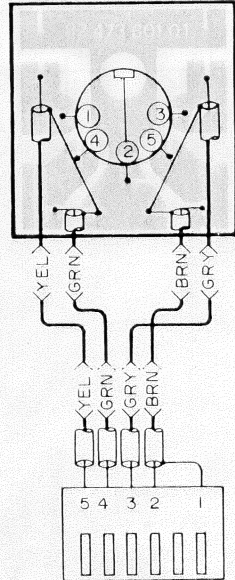
EQ AMP C.B



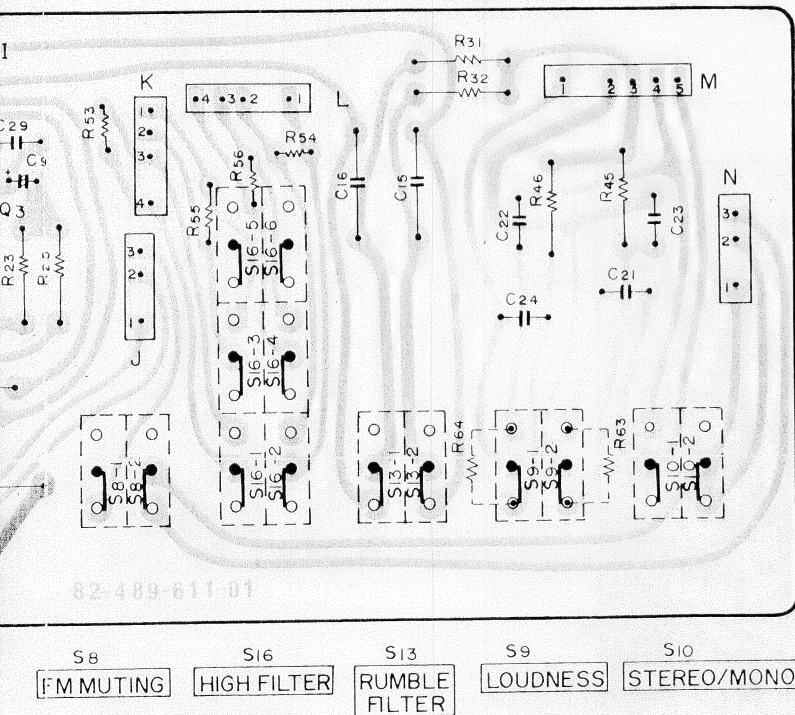
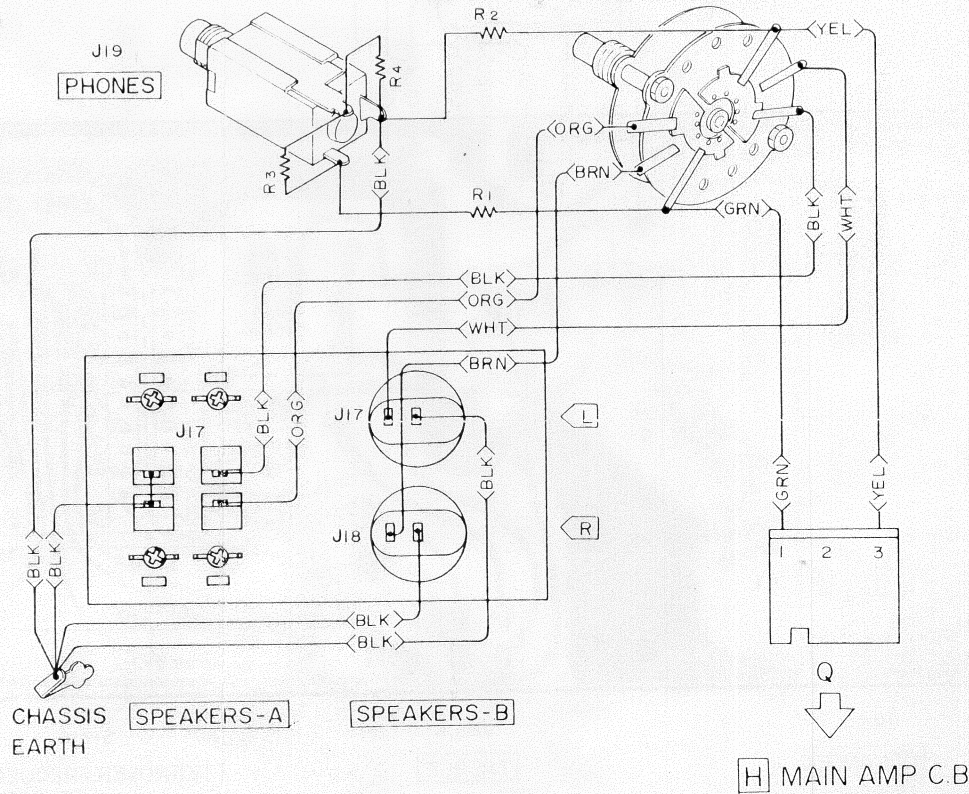
LED C.B-2



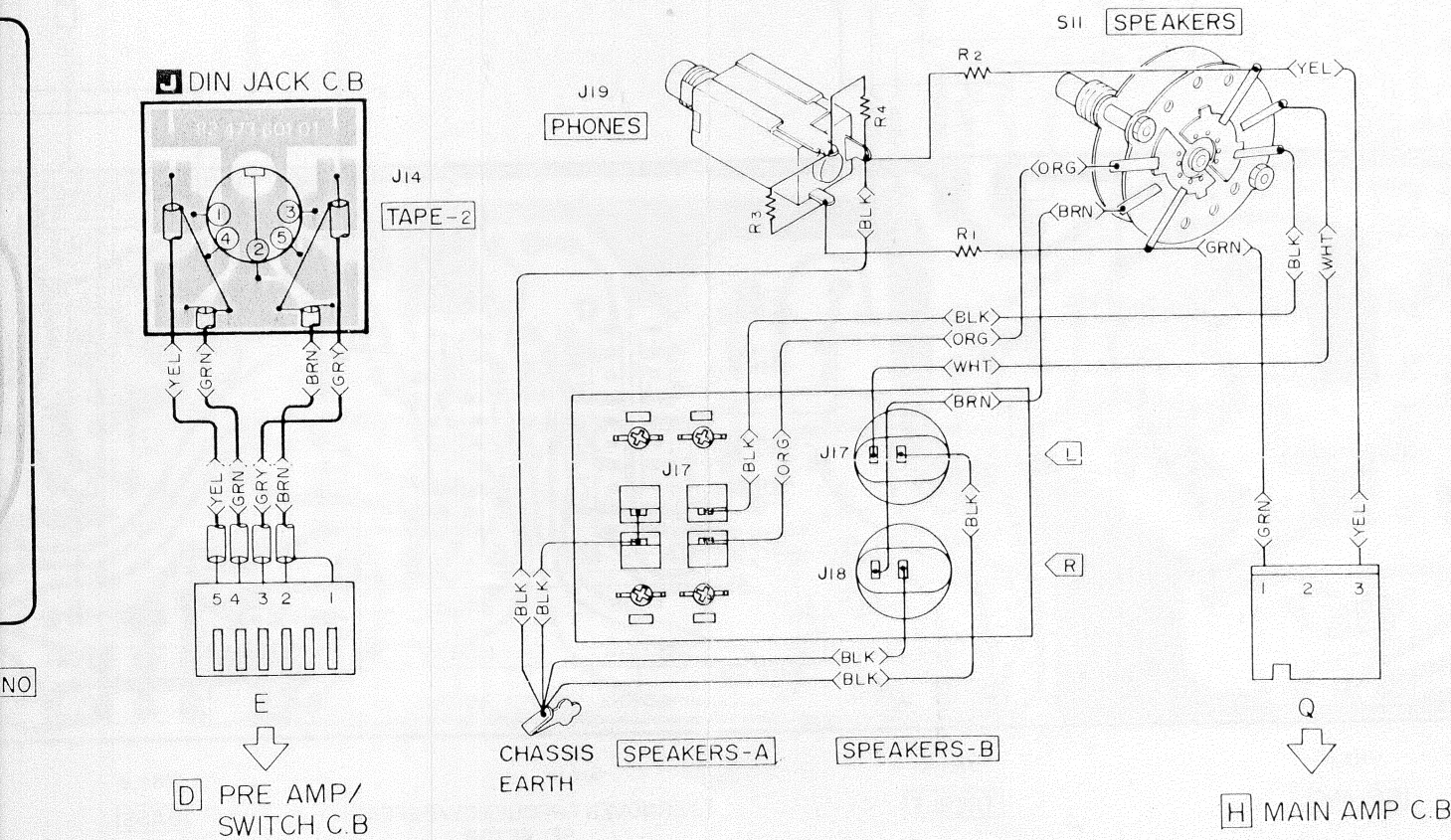
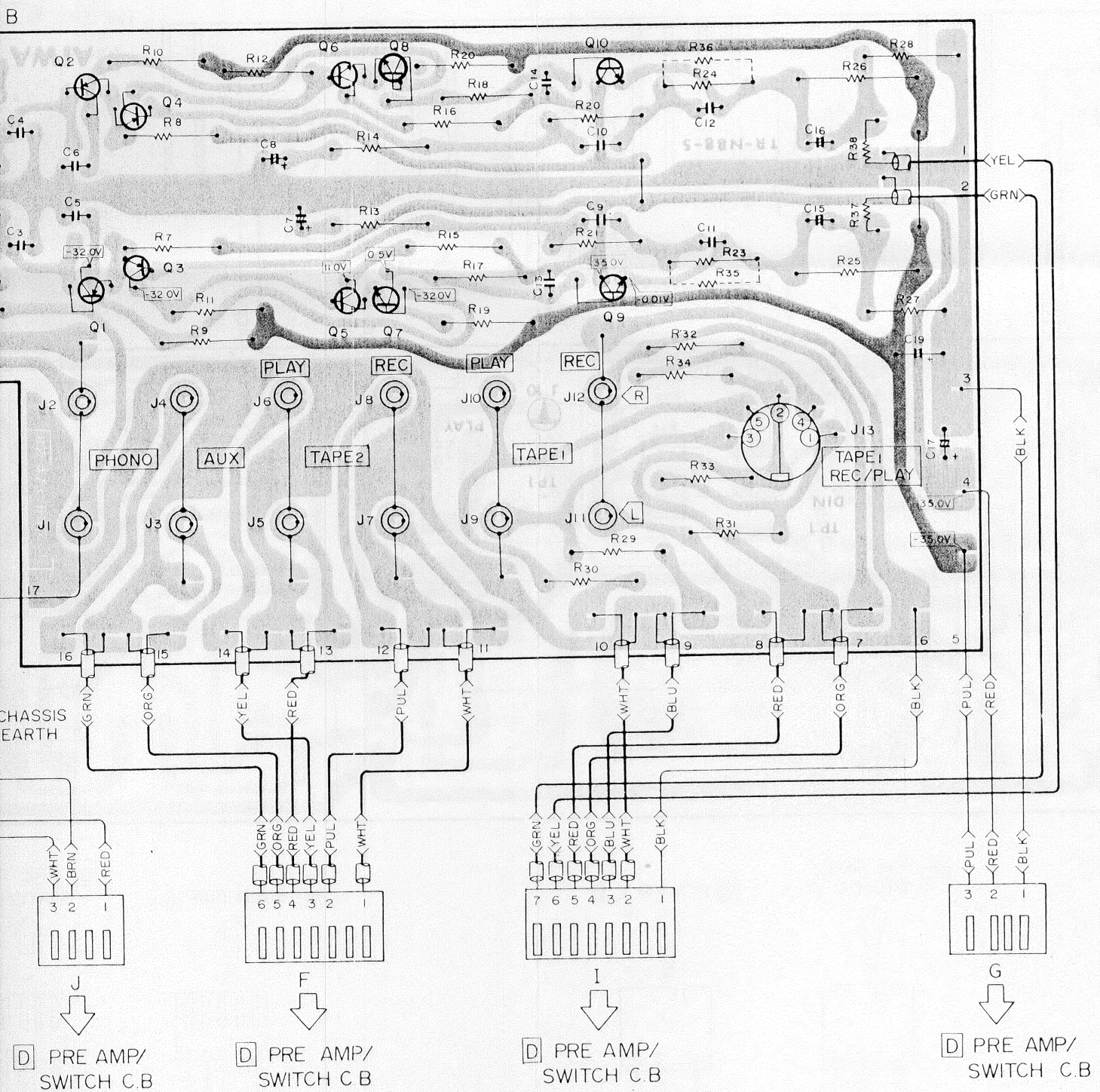
DIN JACK C.B



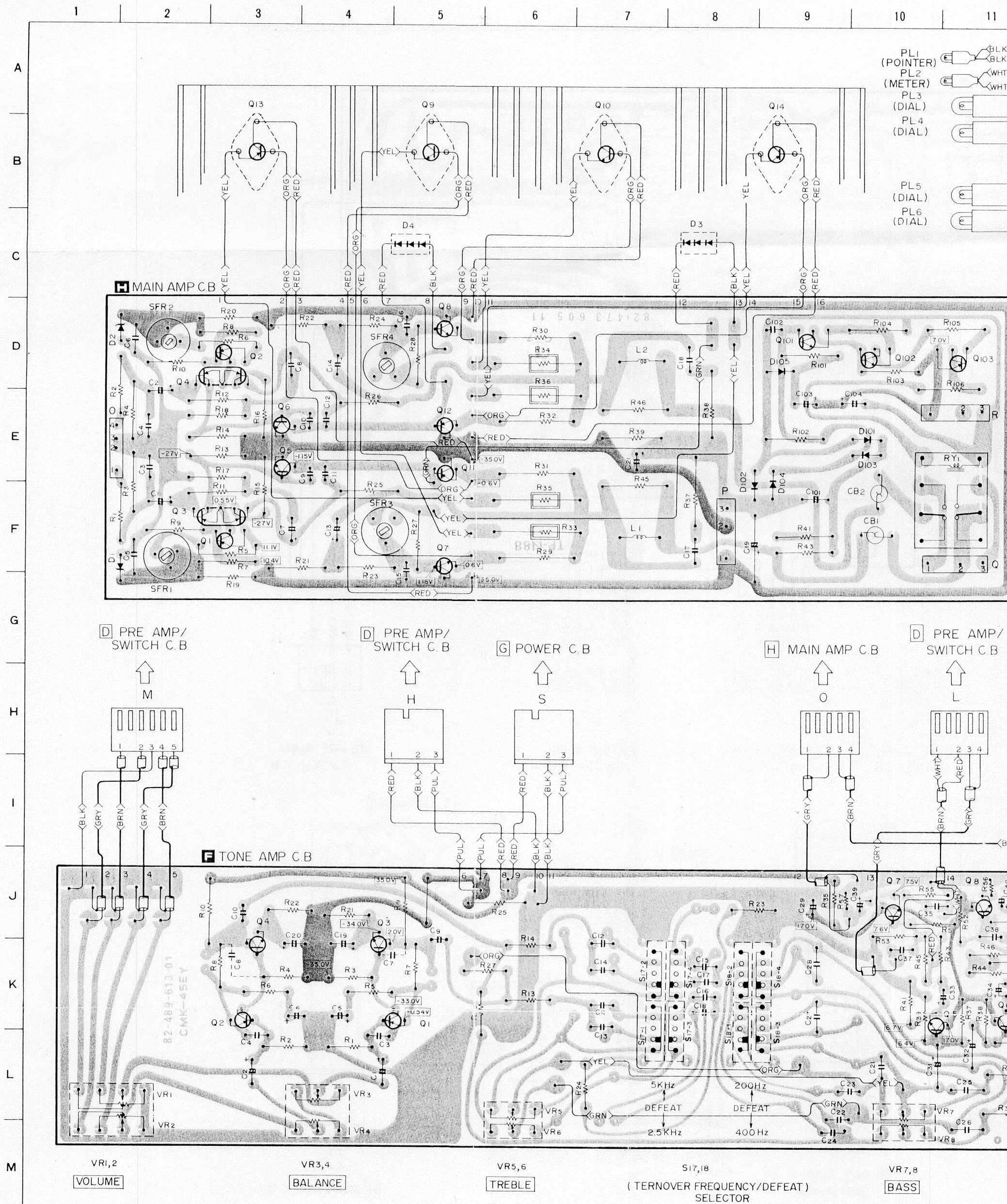
SPEAKERS



12 13 14 15 16 17 18 19



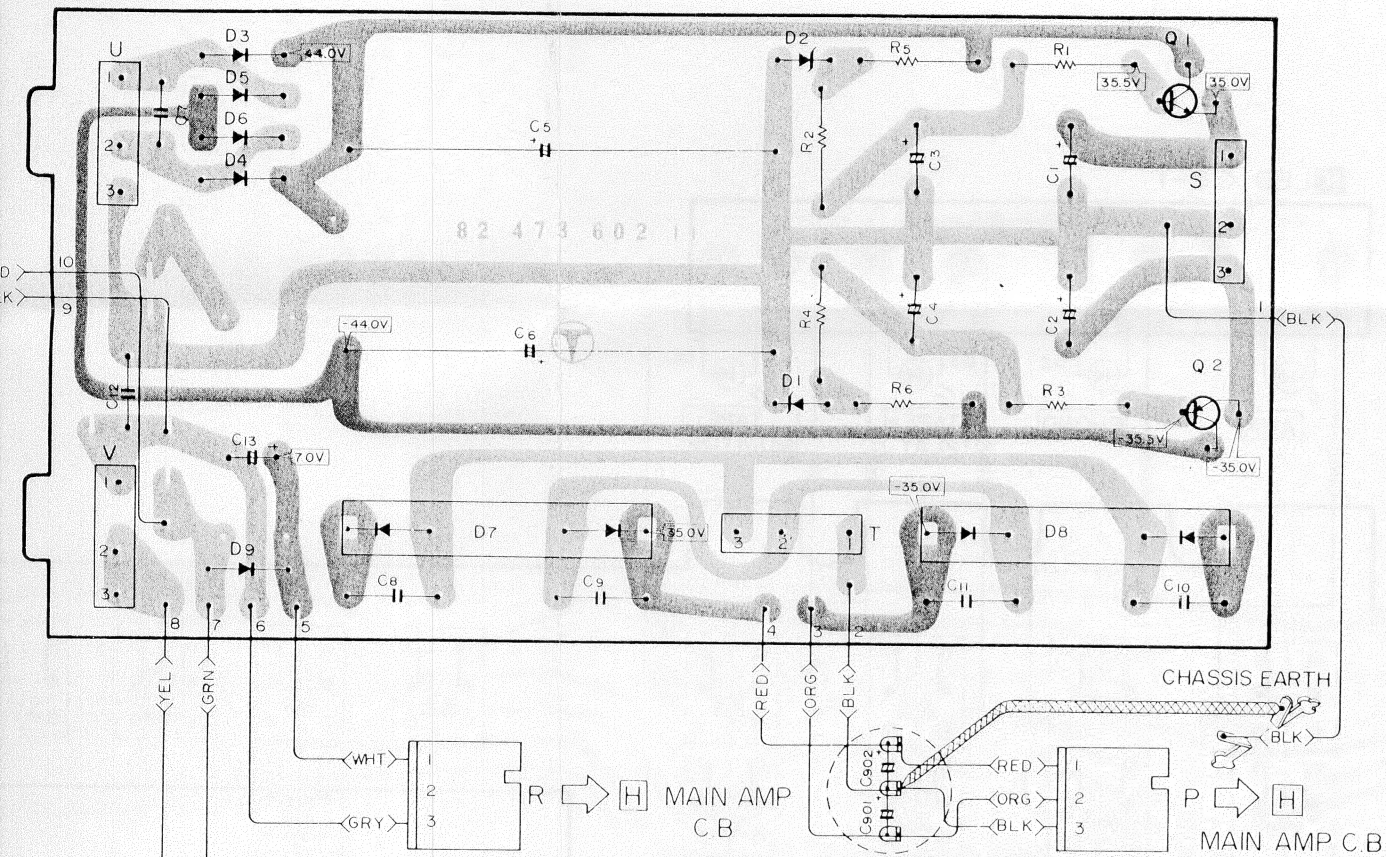
WIRING-3



(2) The voltage is the reference value measured with a test



POWER C.B



POWER C.B

POWER C.B

POWER C.B

RE AMP/
SWITCH C.B

